

Claims

Configuration of at least two exhaust gas turbochargers

1. Configuration of at least two exhaust gas turbochargers on an internal combustion engine with a plurality of cylinders, in particular in a motor vehicle, in which the two turbine housings are connected to the exhaust gas system of the internal combustion engine and are immediately adjacent to each other and one turbine is always connected to one compressor by means of a drive shaft, the drive shafts being rotatably mounted in corresponding bearing housings, *characterized in that* the turbine housings (16a, 18a) are oriented so that the drive shafts (30) are at least approximately aligned (32) with each other and *in that* the bearing housings (24) on both sides are connected to the turbine housings (16a, 18a).
2. The configuration as claimed in claim 1, *wherein* the turbine housings (16a, 18a) are integrally cast as one structural unit.
3. The configuration as claimed in claim 1 or 2, *wherein* the admission channels (16b, 18b) of the turbine housings (16a, 18a) are connected by way of exhaust gas lines (28a, 28b) separate from each other to specific cylinders of the internal combustion engine.

4. The configuration as claimed in claim 3, *wherein*, in the case of a four-cylinder in-line internal combustion engine, one admission channel (16b) is connected to two cylinders (I and IV) and the other admission channel (18b) to the other two cylinders (II and III), the ignition gap between the cylinders interconnected on the exhaust gas side always amounting to 360 degrees (crankshaft).
5. The configuration as claimed in one or more of claims 1 to 4, *wherein* the turbine housings (16a, 18a) have a common discharge channel (26) for the exhaust gas leading to an exhaust gas line mounted downstream.
6. The configuration as claimed in one or more of claims 1 to 5, *wherein* the two exhaust gas turbochargers (12, 14) are each provided with separate bypass lines (34, 36) which, each under the control of a bypass valve (38, 40), permit separate boost pressure adjustments.
7. The configuration as claimed in one or more of claims 1 to 5, *wherein* the two exhaust gas turbochargers (12, 14) are each provided with a bypass line (56c, 58c) which, being brought together in the area of a single bypass valve (60), permit uniform boost pressure adjustment.
8. The configuration as claimed in claim 6 or 7, *wherein* the bypass lines (56c, 58c) are integrated into the turbine housings (56a, 58a).
9. The configuration as claimed in one or more of claims 6 to 8, *wherein* the bypass lines (56c, 58c) integrated into the turbine housings (56a, 58a) branch off the admission channels (56b, 58b) and are brought together approximately in the center between the two turbine housings (56a, 58a) and *wherein* the bypass valve (60) discharges through its valve opening (62) into the discharge channel (26) downstream from the exhaust gas turbines (16c, 18c).